

Name: \_\_\_\_\_

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A2CC: Sketching Polynomials without a Graphing Calculator

Do Now:

1. Given  $f(x) = x^6 - 5x^4 - 36x^2$ , find:

- (a) the complete factorization of  $f(x)$
- (b) the complete solution set of  $f(x)$
- (c)

Sketch the general graph of each function without your graphing calculator. Your sketch should contain both the  $x$ - and  $y$ -intercepts.

1.  $f(x) = (x + 1)(x - 2)(x - 4)$

2.  $f(x) = -(x + 3)(x + 2)(x - 1)$

3.  $f(x) = (x + 5)^2(x + 3)$

4.  $f(x) = x^4 - 5x^2 + 4$

5.  $f(x) = x^3 + 2x^2 - 8x$

6.  $f(x) = x^3 + 2x^2 - 36x - 72$

7.  $f(x) = 2x^3 - 12x^2 + 18x$

8.  $f(x) = x^3 - 3x^2 - 4x + 12$

9.  $f(x) = x^3 - x^2 - 12x$

10.  $f(x) = x^4 - 13x^2 + 36$

11.  $f(x) = x^5 - 3x^4 - x^3 + 3x^2$